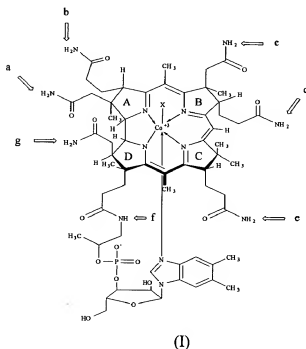


REPLACEMENT CLAIM SET

- 1) (Once Amended) A compound wherein a residue of a compound of formula I



is linked to one or more peptide residues or amino acid residues wherein X is CN, OH, CH<sub>3</sub> or adenosyl, and at least one of the peptide residues or the amino acid residues is linked to one or more chelating groups comprising one or more metallic radionuclides; or a pharmaceutically acceptable salt thereof.

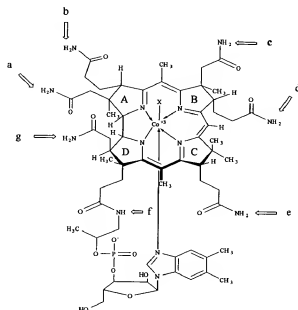
- 2) The compound of claim 1 wherein at least one of the one or more metallic radionuclides is a diagnostic radionuclide.
- 3) The compound of claim 1 wherein at least one of the one or more metallic radionuclides is a ~~therapeutic~~ radionuclide.
- 4) CANCELLED
- 5) The compound of claim 1 wherein the residue of a compound of formula I is linked to a peptide residue at the position of the b-carboxamide, d-carboxamide, e-carboxamide, or the 6-position of the compound of formula I.

- 6) The compound of claim 1 wherein the residue of a compound of formula I is linked to a peptide residue at the position of the b-carboxamide of the compound of formula I.
- 7) The compound of claim 1 wherein the residue of a compound of formula I is linked to a peptide residue at the d-carboxamide of the compound of formula I.
- 8) The compound of claim 1 wherein the residue of a compound of formula I is linked to a peptide residue at the e-carboxamide of the compound of formula I.
- 9) The compound of claim 1 wherein the residue of a compound of formula I is linked to a peptide residue at the 6-position of the compound of formula I.
- 10) The compound of claim 1 wherein at least one peptide residue comprises 2 to about 20 amino acids.
- 11) The compound of claim 10 wherein at least one peptide residue is a residue of poly-L-lysine.
- 12) The compound of claim 1 wherein at least one peptide residue is linked to more than one chelating group.
- 13) The compound of claim 1 wherein at least one peptide residue is linked to 2 to about 4 chelating groups.
- 14) The compound of claim 1 wherein at least one chelating group is EDTA, DTPA, TETA, DOTA, DOTMP, DCTA, or MAG3.
- 15) The compound of claim 1 wherein at least one chelating group is DTPA.
- 16) The compound of claim 1 wherein each metallic radioisotope is independently Antimony-124, Antimony-125, Arsenic-74, Barium-103, Barium-140, Beryllium-7, Bismuth-206, Bismuth-207, Cadmium-109, Cadmium-115m, Calcium-45, Cerium-139, Cerium-141, Cerium-144, Cesium-137, Chromium-51, Cobalt-56, Cobalt-57, Cobalt-58, Cobalt-60, Cobalt-64, Copper-67, Erbium-169, Europium-152, Gallium-64, Gadolinium-153, Gadolinium-157, Gold-195, Gold-199, Hafnium-175, Hafnium-175-181, Holmium-166, Indium-111, Iridium-192, Iron-55, Iron-59, Krypton-85, Lead-210, Manganese-54, Mercury-197, Mercury-203, Molybdenum-99, Neodymium-147, Neptunium-237, Nickel-63, Niobium-95, Osmium-185 + 191, Palladium-103, Platinum-195m, Praseodymium-143, Promethium-147, Protactinium-233, Radium-226, Rhenium-186, Rhenium-188, Rubidium-86, Ruthenium-103, Ruthenium-106, Scandium-44, Scandium-46, Selenium-

75, Silver-110m, Silver-111, Sodium-22, Strontium-85, Strontium-89, Strontium-90, Sulfur-35, Tantalum-182, Technetium-99m, Tellurium-125, Tellurium-132, Thallium-204, Thorium-228, Thorium-232, Thallium-170, Tin-113, Tin-114, Tin-117m, Titanium-44, Tungsten-185, Vanadium-48, Vanadium-49, Ytterbium-169, Yttrium-86, Yttrium-88, Yttrium-90, Yttrium-91, Zinc-65, or Zirconium-95.

- 17) The compound of claim 1 wherein a residue of a compound of formula I is linked to a residue of formula  $-[\text{NHCH}[(\text{CH}_2)_4\text{NH}_2\text{-DET}]\text{CO-}]_n\text{-Q}$  wherein Q is H,  $(\text{C}_1\text{-C}_{14})\text{alkyl}$ , or a suitable carboxy protecting group; and DET is a chelating group residue comprising a metallic radionuclide and wherein n is between 2 and about 20.
- 18) The compound of claim 17 wherein the chelating group is DTPA.
- 19) The compound of claim 1 wherein the residue of a compound of formula I is linked to two peptide residues wherein at least one peptide residue is linked to one or more chelating groups comprising one or more metallic radionuclides.
- 20) CANCELLED
- 21) CANCELLED
- 22) CANCELLED
- 23) CANCELLED
- 24) CANCELLED
- 25) CANCELLED
- 26) CANCELLED
- 27) CANCELLED

- 28) (Once Amended) A compound wherein a residue of a compound of formula I



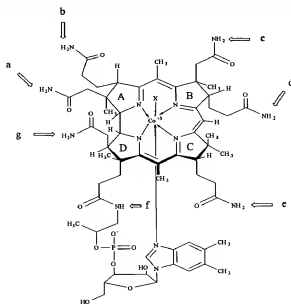
is linked to one or more residues of the formula  $-\text{[NHCH}[(\text{CH}_2)_4\text{NH}_2\text{-DET}]\text{CO}]_n\text{-Q}$  wherein Q is H,  $(\text{C}_1\text{-C}_{14})$ alkyl, or a suitable carboxy protecting group; X is CN, OH,  $\text{CH}_3$  or adenosyl; DET is a chelating group residue comprising a metallic radionuclide; and n is between 2 and about 20; or a pharmaceutically acceptable salt thereof.

- 29) The compound of claim 28 wherein the chelating group is DTPA.
- 30) The compound of claim 28 wherein each metallic radionuclide is independently Antimony-124, Antimony-125, Arsenic-74, Barium-103, Barium-140, Beryllium-7, Bismuth-206, Bismuth-207, Cadmium-109, Cadmium-115m, Calcium-45, Cerium-139, Cerium-141, Cerium-144, Cesium-137, Chromium-51, Cobalt-56, Cobalt-57, Cobalt-58, Cobalt-60, Cobalt-64, Copper-67, Erbium-169, Europium-152, Gallium-64, Gadolinium-153, Gadolinium-157, Gold-195, Gold-199, Hafnium-175, Hafnium-175-181, Holmium-166, Indium-111, Iridium-192, Iron-55, Iron-59, Krypton-85, Lead-210, Manganese-54, Mercury-197, Mercury-203, Molybdenum-99, Neodymium-147, Neptunium-237, Nickel-63, Niobium-95, Osmium-185 + 191, Palladium-103, Platinum-195m, Praseodymium-143, Promethium-147, Protactinium-233, Radium-226, Rhenium-186, Rhenium-188,

Rubidium-86, Ruthenium-103, Ruthenium-106, Scandium-44, Scandium-46, Selenium-75, Silver-110m, Silver-111, Sodium-22, Strontium-85, Strontium-89, Strontium-90, Sulfur-35, Tantalum-182, Technetium-99m, Tellurium-125, Tellurium-132, Thallium-204, Thorium-228, Thorium-232, Thallium-170, Tin-113, Tin-114, Tin-117m, Titanium-44, Tungsten-185, Vanadium-48, Vanadium-49, Ytterbium-169, Yttrium-86, Yttrium-88, Yttrium-90, Yttrium-91, Zinc-65, or Zirconium-95.

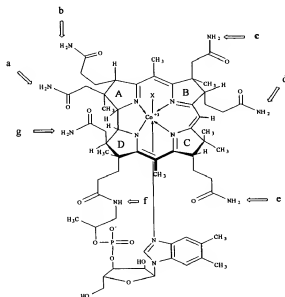
- 31) The compound of claim 28 wherein n is about 8 to about 11.
- 32) The compound of claim 28 wherein the residue of a compound of formula I is linked to two residues of the formula  $P-[NHCH[(CH_2)_4NH_2-DET]CO-]_n-Q$  wherein P is H,  $(C_1-C_{14})$ alkyl, or a suitable amino protecting group; Q is H,  $(C_1-C_{14})$ alkyl, or a suitable carboxy protecting group; and DET is independently a chelating group residue comprising a metallic radionuclide and wherein n is 2 to about 20.
- 33) CANCELLED ✓
- 34) CANCELLED ✓
- 35) CANCELLED ✓
- 36) CANCELLED ✓
- 37) The compound of claim 1 wherein the residue of a compound of formula I is further linked to one or more detectable radionuclides.
- 38) The compound of claim 37 wherein the detectable radionuclide is a non-metallic radionuclide.
- 39) The compound of claim 38 wherein the non-metallic radionuclide is Carbon-11, Fluorine-18, Bromine-76, Iodine-123, or Iodine-124.
- 40) The compound of claim 37 wherein the detectable radionuclide is directly linked to the compound of formula I.
- 41) The compound of claim 37 wherein the detectable radionuclide is linked by a linker to the compound of formula I.
- 42) The compound of claim 41 wherein the linker is of the formula W-A wherein A is  $(C_1-C_6)$ alkyl,  $(C_2-C_6)$ alkenyl,  $(C_2-C_6)$ alkynyl,  $(C_3-C_8)$ cyclo-alkyl, or  $(C_6-C_{10})$ aryl, wherein W is  $-N(R)C(=O)-$ ,  $-C(=O)N(R)-$ ,  $-OC(=O)-$ ,  $-C(=O)O-$ ,  $-O-$ ,  $-S-$ ,  $-S(O)-$ ,  $-S(O)_2-$ ,  $-N(R)-$ ,

- C(=O)-, or a direct bond; wherein each R is independently H or (C<sub>1</sub>-C<sub>6</sub>)alkyl; and wherein A is linked to one or more non-metallic radionuclides.
- 43) The compound of claim 41 wherein the linker is about 5 angstroms to about 50 angstroms, inclusive, in length.
- 44) The compound of claim 41 wherein the linker is linked to the 6-position of the compound of formula I or is linked to the residue of a-, b-, d- or e-carboxamide group of the compound of formula I.
- 45) (Once Amended) A compound wherein a residue of a compound of formula I



is linked to a residue of a peptide which is linked to one or more chelating groups comprising a metallic radionuclide; and X is CN, OH, CH<sub>3</sub> or adenosyl; or a pharmaceutically acceptable salt thereof.

- 46) (Once Amended) A compound wherein a residue of a compound of formula I



(I)

is linked to a residue of an amino acid which is linked to one or more chelating groups comprising a metallic radionuclide; and X is CN, OH, CH<sub>3</sub> or adenosyl; or a pharmaceutically acceptable salt thereof.

- 47) CANCELLED  
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54) CANCELLED  
55) CANCELLED

- 56) A pharmaceutical composition comprising a compound of any one of claims 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 28, 29, 30, 31, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, or 45, and a pharmaceutically acceptable carrier.
- 57) A method for imaging a tumor in mammalian tissue comprising administering to the mammal an amount of a compound of any one of claims 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12,

- 13, 14, 15, 16, 17, 18, 19, 28, 29, 30, 31, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, or 45; and detecting said compound.
- 58) The method of claim 57 wherein the mammal is a human.
- 59) The method of claim 57 wherein the mammalian tissue is located in the breast, lung, thyroid, lymph node, genitourinary system, musculoskeletal system, gastrointestinal tract, central or peripheral nervous system, head, neck, or heart.
- 60) A method for treating a tumor in a mammal comprising administering to the mammal an effective therapeutic amount of a compound of any one of claims 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 28, 29, 30, 31, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, or 45; wherein said compound comprises at least one therapeutic radionuclide.
- 61) The method of claim 60 wherein the mammal is a human.
- 62) The method of claim 60 wherein the mammalian tissue is located in the breast, lung, thyroid, lymph node, genitourinary system, musculoskeletal system, gastrointestinal tract, central or peripheral nervous system, head, neck, or heart.
- 63) A compound of any one of claims 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 28, 29, 30, 31, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, or 45 for use in medical therapy or diagnosis.
- 64) CANCELLED
- 65) CANCELLED
- 66) CANCELLED
- 67) CANCELLED
- 68) CANCELLED
- 69) CANCELLED